International Journal of Theoretical Physics

Volume 19, Number 1 January 1980

## Contents

Kinks in General Relativity, *A. R. Shastri, J. G. Williams, and P. Zvengrowski* 1

Time-Reversed Information Transmission, *Lila L. Gatlin* 25

Nonlocal Structures: Bilocal Photon, *Roger E. Clapp* 31

International Journal of Theoretical Physics

Volume 19, Number 2 February 1980

## Contents

Trilocal Structures. I. Secular Equation, *Roger E. Clapp, Evelyn W. Mack, Fay Simons, and Joseph A. Wolf, Jr.* 89

New Spinor Representation of Maxwell's Equations. I. Generalities, *A. A. Campolattaro* 99

New Spinor Representation of Maxwell's Equations. II. Algebraic Properties, *A. A. Campolattaro* 127

Functorial Geometric Quantization and Van Hove's Theorem, *Mark J. Gotay* 139

Proposed Test for a Hidden Variables Theory, *Stanley P. Gudder* 163

International Journal of Theoretical Physics

Volume 19, Number 3 March 1980

## Contents

A Definition of the Gravitational Field
*N. K. Kofinti* 169

A Spherical Cavity in an Einstein Universe, *N. K. Kofinti* 177

Some Consequences of the Nonlocalizability of Space-Time Events, *K. Ruebenbauer* 185

The Eightfold Way to Color Geometrodynamics, *Eckehard W. Mielke* 189

Comments on Limits of Space-Times, *Franco Bampi and Roberto Cianci* 211

Isotropy of the Velocity of Light, *K. Ruebenbauer* 217

Quantum Logic of Sequential Events and Their Objectivistic Probabilities, *Wulf Rehder* 221

Nelson–Brown Motion: Some Question Marks, *Bogden Mielnik and Göran Tengstrand* 239

International Journal of Theoretical Physics

Volume 19, Number 4 April 1980

## Contents

Logical Foundation of Quantum Mechanics, *E. W. Stachow* 251

Charge-Field Formulation of Quantum Electrodynamics (QEMED), *Darryl Leiter* 305

International Journal of Theoretical Physics

Volume 19, Number 5 May 1980

## Contents

Causality and the Group Structure of Space-Time, *A. J. Briginshaw* 329

Space-Time and Spatial Geodesics on a Rotating Sphere, *K. McFarlane, N. C. McGill, and I. H. McKenna* 347

Propositions and Orthocomplementation in Quantum Logic, *C. Garola* 369

Heavy Quark Cascade Mechanism of Tetramuon Production by Neutrinos in a Scale-Breaking Model, *G. C. Chukwumah* 379

Six Flavors of Quarks but only Three Flavors of Leptons, *Gerold Rosen* 393

Relativistic Feynman-Type Integrals, *Kh. Namsrai* 397

International Journal of Theoretical Physics

Volume 19, Number 6 June 1980

## Contents

Lorentz Invariance of Gravitational Lagrangians in the Space of Reference Frames, *G. Cognola* 405

QCD Predictions for Opposite-Sign Dimuon Production Rates in a Charged-Current Inclusive Neutrino Scattering at High Energies, *G. C. Chukwumah* 415

Geometric Model for Fundamental Particles, *E. P. Battey-Pratt and T. J. Racey* 437

International Journal of Theoretical Physics

Volume 19, Number 7 July 1980

## Contents

Dirac Mechanics and Landon Two-Fluid Model in $^4$He II, *Jesús Rodríguez-Gómez* 477

Application of the Maximum Algorithm to the Lipkin Model, *Wolfgang Textor* 485

Relationship between Physical Constants and the Electron Mass, *Miklós Zágoni* 497

Fundamental Principles of Quantum Theory, *Slawomir Bugajski and Pekka J. Lahti* 499

Empirical Topology: Topologies from Partially Ordered Sets, *A. R. Marlow* 515

Quantum Probability Zero–One Law for Sequential Terminal Events, *Wulf Rehder* 523

Quantum Interference and the Classical Limit, *J. Anandan* 537

Correspondence-Principle Condition on the Reissner–Nordström Solution for Charged Leptons, *Gerald Rosen* 557

Erratum 561

International Journal of Theoretical Physics

Volume 19, Number 8 August 1980

## Contents

Growth of Discontinuities in Chemically Reacting Relativisitic Fluids, *Rishi Ram and H. N. Singh* 563

Torsion and Related Concepts: An Introductory Overview, *Borut Gogala* 573

Rotation and Acceleration as Parallel Transport in a Space-Time with Torsion, *Borut Gogala* 587

Two Exact Models of Charged Dust Collapse, *S. Chatterjee and S. Banerji* 599

Nonstationary Quantum Mechanics. I. Time-Irreversible Noninstantaneous Self-Reduction to a Stationary State of Some Quantal Wave Packets, *Nickola Stefanov Todorov* 605

International Journal of Theoretical Physics

Volume 19, Number 9 September 1980

## Contents

Dirac's Superposition of Pure States Extended to the Statistical Operators, *Antonio Zecca* 629

Sensitivity of the Three-Body Calculations to Different Effects, *Ahmed Osman* 635

Quantum Mechanics as Relativistic Statistics III. A Relativistic Particle in Two-Dimensional Space-Time, *Yu. A. Rylov* 645

Separability Structures and Killing–Yano Tensors in Vacuum Type-*D* Space-Times without Acceleration, *M. Demianski and M. Francaviglia* 675

Investigation of the Problem of Singularities in General Relativity, *Uma Basu, Indira Addy, and Bidyut Kumar Datta* 681

Weak Circulation Theorems as a Way of Distinguishing between Generalized Gravitation Theories, *M. Enosh and A. Kovetz* 693

International Journal of Theoretical Physics

Volume 19, Number 10 October 1980

## Contents

Quark Interpretation of the Combinatorial Hierarchy, *Kari Enqvist* 713

Nonstationary Quantum Mechanics. II. On the Increase of Entropy with Time, *Nickola Stefanov Todorov* 725

Diophantine Collinearity and Lepton Masses, *Robert L. Pease* 741

On the Quantum Field Theoretic Origin of a Class of Brans–Dicke Scalars, *A. Das* 745

Relativistic Particle Mechanics, *Andreas Bette* 759

Scattering of Long Waves in a Rotating Bifurcated Channel, *George M. Kapoulitsas* 773

International Journal of Theoretical Physics

Volume 19, Number 11 November 1980

## Contents

Uncertainty and Complementarity in Axiomatic Quantum Mechanics, *Pekka J. Lahti* 789

Modal Quantum Logic and Its Dialogic Foundation, *F. J. Burghardt* 843

International Journal of Theoretical Physics

Volume 19, Number 12 December 1980

## Contents

Mathematical Electron, *Andre Gleyzal* 867

Quadratic Lagrangians and the Reissner–Nordström–de Sitter Metric, *Jarkko A. Leiro* 873

Relativistic Interactions without Fields or Potentials, *Andreas Bette* 877

"Anomalous" Refractive Index Dispersion Curves—A Relativistic Interpretation, *Clarence A. Gall* 889

Elementary Proof of Zeeman's Theorem, *A. J. Briginshaw* 899

Characterization of Quantum Logics, *P. J. Lahti* 905

Quantum Theoretical Physics is Statistical and Relativistic, *Charles Harding* 925

Author Index to Volume 19 935

s

80

67

73

77

89

99

05

25

35